WHAT IS CLAIMED IS:

CLAIMS

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1. In a wireless communication system, a method for transmitting a
2 control message from a first entity to a second entity, comprising:

at the first entity, measuring at least one characteristic of a channel
4 through which a signal is received from the second entity to produce channel
state information;

6 forming the control message indicative of the channel state information;
and

8 transmitting the control message from the first entity to the second entity
at a particular power level determined based at least in part on the control
10 message.

2. The method of claim 1, wherein the control message comprises a
2 particular codeword selected from among a plurality of possible codewords.

3. The method of claim 2, wherein the power level is determined based
2 on a minimum distance of the selected codeword.

4. The method of claim 2, wherein the power level is determined based
2 on an expected frequency of the selected codeword being transmitted.

5. The method of claim 2, wherein the power level is determined based
2 on a particular number of times the selected codeword is repeated for a
transmission.

6. The method of claim 1, wherein the control message is a data rate
2 control message indicative of a rate for a data transmission requested from the
second entity.

7. The method of claim 1, wherein the at least one characteristic
2 comprises a carrier-to-noise-plus interference ratio (C/I).

8. The method of claim 1, wherein the control message is selected from
2 among a plurality of data rate control messages.

9. The method of claim 2, wherein the selected codeword has a
2 minimum distance based on quality of the channel.

10. The method of claim 2, wherein the selected codeword has a
2 minimum distance based on frequency in which the control message is
transmitted.

11. In a wireless communication system, a method for transmitting a
2 message from a first entity to a second entity, comprising:
        identifying a codeword associated with the message, wherein the
4 identified codeword is one of a plurality of codewords defined for an alphabet,
and wherein at least two codewords in the alphabet have unequal distances to
6 their nearest codewords; and
        transmitting the identified codeword from the first entity to the second
8 entity.

12. The method of claim 11, further comprising:
2   determining a transmit power level for the identified codeword, and
        wherein the identified codeword is transmitted at the determined
4 transmit power level.

13. The method of claim 12, wherein the transmit power level for the
2 identified codeword is based at least in part on the distance of the identified
codeword to its nearest codeword.

14. The method of claim 12, wherein the transmit power level for the
2 identified codeword is determined to achieve a particular level of performance.

15. The method of claim 14, wherein the particular level of performance
2 is approximately one percent frame error rate or better.

16. The method of claim 11, wherein the message to be transmitted is
2 one of a plurality of possible messages, and wherein the plurality of codewords
in the alphabet are assigned to the plurality of possible messages in accordance
4 with a particular assignment scheme.

17. The method of claim 16, wherein the plurality of codewords in the
2 alphabet are assigned to the plurality of possible messages such that messages
more likely to be transmitted at higher transmit power levels are assigned with
4 codewords having larger distances to their nearest codewords.

18. The method of claim 16, wherein the plurality of codewords in the alphabet are assigned to the plurality of possible messages such that messages more likely to be transmitted are assigned with codewords having larger distances to their nearest codewords.

19. The method of claim 11, wherein the alphabet includes N codewords having minimum distances of d_1 through d_N, and wherein the minimum distances conform to the following:

$$d_1 \geq d_2 \geq \ldots \geq d_{N-1} \geq d_N \text{ , and}$$

$$d_1 > d_N \text{ .}$$

20. The method of claim 11, wherein the message identifies a particular data rate for a data transmission requested by the first entity from the second entity.

21. The method of claim 11, wherein the first entity is an access terminal in the wireless communication system.

22. The method of claim 11, wherein the wireless communication system is a CDMA system.

23. In a wireless communication system, a method for transmitting a message from a first entity to a second entity, comprising:
    identifying a codeword associated with the message, wherein the identified codeword is one of a plurality of codewords defined for an alphabet, and wherein at least two codewords in the alphabet may be transmitted with different amounts of energy for a particular level of performance under similar link condition;
    determining a transmit power level for the identified codeword; and
    transmitting the identified codeword at the determined transmit power level.

24. The method of claim 23, wherein at least two codewords in the alphabet have unequal distances to their nearest codewords.

25. The method of claim 23, wherein the plurality of codewords in the alphabet are associate with a plurality of points in a signal constellation, and

wherein at least two points in the signal constellation have unequal distances to

4 their nearest codewords.

26. The method of claim 25, wherein the plurality of points in the signal

2 constellation are selected from points in signal constellations for quadrature
phase shift keying (QPSK), M-ary phase shift keying (M-PSK), M-ary

4 quadrature amplitude modulation (M-QAM), or a combination thereof.

27. The method of claim 23, wherein at least two codewords in the

2 alphabet have unequal lengths.

28. The method of claim 27, further comprising:

2   encoding the identified codeword in accordance with a particular coding
scheme.

29. The method of claim 23, wherein the message to be transmitted is

2 one of a plurality of possible messages, and wherein the plurality of codewords
in the alphabet are assigned to the plurality of possible messages such that

4 messages more likely to be transmitted at higher transmit power level are
assigned with codewords requiring lower transmit power to achieve the

6 particular level of performance.

30. The method of claim 23, wherein the message to be transmitted is

2 one of a plurality of possible messages, and wherein the plurality of codewords
in the alphabet are assigned to the plurality of possible messages such that

4 messages more likely to be transmitted are assigned with codewords requiring
less transmit power to achieve the particular level of performance.

31. An access terminal in a wireless communication system, comprising:

2   a receiver for receiving a signal from an access network and determining
at least one characteristic of a forward link channel through which the signal is

4 received;
a data processor configured to form a control message indicative of a

6 state of the forward link channel; and
a transmitter unit configured to transmit the control message at a

8 particular transmit power determined based at least in part on the control
message.

32. An access terminal in a wireless communication system, comprising:

2   a data processor configured to receive and process a codeword for a message, wherein the codeword is one of a plurality of codewords defined for

4   an alphabet, and wherein at least two codewords in the alphabet may be transmitted with different amounts of energy for a particular level of

6   performance under similar link condition; and

      a transmitter unit operatively coupled to the data processor and

8   configured to transmit the processed codeword.

      33. The access point of claim 32, further comprising:

2   a controller operatively coupled to the data processor and configured to provide a signal indicative of transmit power level to be used for the processed

4   codeword.

      34. The access point of claim 32, further comprising:

2   a signal quality measurement unit configured to receive samples for a received signal and to determine a received signal quality of signals transmitted

4   from one or more transmitting sources, and

      wherein the processed codeword is transmitted at a power level based in

6   part on the received signal quality of a transmitting source to which the processed codeword is transmitted.

      35.   A communication unit in a wireless communication system,

2   comprising:

      a receiver configured to receive a signal from a transmitting source and

4   determine at least one characteristic of a communication link through which the signal is received;

6   a data processor configured to form a message indicative of a state of the communication link; and

8   a transmitter unit configured to transmit the message at a particular transmit power determined based at least in part on the message.

      36. An access point in a CDMA system comprising the communication

2   unit of claim 35.

      37. An apparatus in a wireless communication system, comprising:

2   means for receiving a signal from a transmitting source and determining at least one characteristic of a communication link through which the signal is

4   received;

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means for forming a control message indicative of a state of the
6   communication link; and

    means for transmitting the control message at a particular transmit
8   power determined based at least in part on the control message.

    38. The apparatus of claim 37, wherein the control message comprises a
2   codeword selected from among a plurality of codewords defined for an
alphabet, and wherein at least two codewords in the alphabet may be
4   transmitted with different transmit power for a particular level of performance
under similar link condition.